New Military Hospital Leverages Evidence-Based Design to Improve

INFECTION CONTROL STANDARDS

A Case Study on Infection Control at a New Military Hospital

INSIDE YOU WILL LEARN ABOUT:

The benefits of creating multidisciplinary stakeholder teams.

The complications that can arise with some antimicrobial cleaners.

The close connection between cleaning standards and furniture selection.

This case study was created as a benefit for the Affiliate+ Program.
The quest to develop tough infection control standards for a new military hospital started, literally, at ground level. To understand how to improve standards, architects and designers at HDR began by looking at how well floors and other surfaces were currently being cleaned throughout the existing hospital. The answer, as it turns out: not well.

“The hospital had been using a cleaning product designed for ceramic tile or porcelain tile for all surfaces in their existing facilities,” recalled Jean Hansen, Global Sustainable Interiors Manager for HDR, the hospital’s architecture and design firm. “It was ruining a lot of finishes because it was not a general purpose cleaner, and very harsh.”

To improve standards, Hansen says, the client wanted to effect a culture change. They wanted to do things “smarter and better,” and to implement best practices. To help them on their way, HDR championed evidence-based design strategies that would positively impact safety, healing, and patient outcomes.

“You really have to understand what your client understands,” says Hansen, who is based in HDR’s San Francisco office. “You need to have frank discussions about where they are at this point in time—and how they can rethink things from the perspectives of safety, healing, and patient outcomes.”

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A New Military Hospital

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To understand the client’s needs, HDR held multiple stakeholder workshops to review everything from furniture to finishes. Multidisciplinary teams were formed to make recommendations based on their workflow needs. The teams discovered early on that the
hospital’s cleaning standards needed improvement. In some cases, furniture or flooring was being cleaned improperly or inadequately.

HDR started their analysis by asking the environmental services staff to help evaluate possible interior finishes before any decisions were made. Was the product easy to clean and keep clean? As Hansen says: “It’s important to have their buy-off. Without that, there’s limited chance for success.”

HDR also looked at the types of cleaning products that were being used. Hansen discovered that the organization’s standards required them to include antimicrobials, which she knew—from her research with Kaiser Permanente—were not always appropriate or desirable. A majority of antimicrobial products have not been tested for real-life scenarios, she says, and very little evidence exists to prove that adding antimicrobial agents to fabrics, furniture, or finishes improves their efficacy. In fact, Hansen says it can actually have the opposite effect: People think that because the product has added antimicrobials, it doesn’t need to be cleaned.

“It’s not self-cleaning,” she adds. “It still needs to be cleaned just as well.” The hospital’s administration agreed to review its standards requiring the use of (added) antimicrobials in every case. This opened up a new discussion about the kinds of furnishings and finishes that are best suited to a healthcare environment, including a review of how easy each one was to clean and keep clean. That included a head-to-toe examination of the durability, aesthetics, comfort, and ease of cleaning 13 recliners designed for use by patients. Nothing was overlooked; the arm details, the space where the seat and back meet, the levers, and the backrests were analyzed. The client took part in the evaluations, examining each recliner to confirm they would operate as intended—safely and durably for the staff and patients—and would meet infection control goals.

“We wanted to make sure that the surfaces and furniture can be maintained in a consistent manner,” Hansen says, “and that the environmental services staff don’t have to use two very different cleaning methodologies for finishes adjacent to each other.”
Today, many new cleaning methodologies are available, and Hansen believes designers and architects need to be familiar with them—including more comprehensive methods such as hydrogen peroxide vapor and ultraviolet germicidal radiation. Each of the different methods, she believes, can influence design decisions.

“If you don’t have a team that’s going to operate and clean onboard with what you are suggesting,” Hansen says, “it could be a potential challenge for the project. You need an integrated team. The appropriate team members need to evaluate the design, design details, and products to ensure maintainability.”

Conclusion

As Hansen notes, teamwork is essential to successfully integrating evidence-based design solutions to improve infection control. Before that, it’s critical to understand your client’s needs along with their current processes and standards, and to reach an agreement on cleaning and maintenance procedures before making decisions. And while it’s too early to tell whether these strategies will help reduce infections at the new hospital (it’s still under construction), Hansen and her team already know that a more thoughtful, evidence-based approach has made an impact. When it does open its doors in mid-2017, the hospital, which is on track for LEED certification, will have been sustainably designed and constructed for a healthy environment, durability, maintainability, and infection control.

Design Team

*Architecture/Design Firm:* HDR Architects